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BICE-004

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

00894

June, 2017

BICE-004 : ADVANCE SURVEYING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Explain the term 'Tacheometry'. What are the applications of tacheometric survey ? Mention the instruments used normally in such a survey. *8*

(b) Two distances of 50 m and 75 m were accurately measured on a fairly level ground. The intercept on the staff held vertically were 0·495 m and 0·745 m respectively. Calculate the tacheometric constants of the instrument. *6*

2. (a) What is the purpose of shoreline survey ? *4*

(b) Enlist and explain the equipments needed for sounding in hydrographic surveying. *10*

3. (a) Find the relationship between the degree of a curve and its radius. 6

(b) Write the expressions for the following elements of simple circular curves in terms of radius and deflection angle : 8

(i) Length of Curve (l)

(ii) Tangent Length (T)

(iii) Length of Long Cord (L)

(iv) Mid-ordinate (M)

4. (a) Discuss the requirements of a transition curve. 7

(b) What are the different types of vertical curves employed ? Explain. 7

5. (a) Briefly explain how measurement with EDM instruments differs from chaining. What are the advantages of EDM measurements ? 7

(b) Describe in detail the errors in the equipment for Total Station. 7

6. (a) Explain the term 'Strength of Figure' as applied to triangulation. 6

(b) Define the following astronomical terms : 8

(i) Zenith

(ii) Nadir

(iii) Celestial Horizon

(iv) Celestial Equator

7. (a) What is Relief displacement ? Discuss the utilization of relief displacement. 8

(b) Define Remote Sensing. Write the advantages of satellite images in detail. 6

8. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Radiometric Resolution

(b) Well Conditioned Triangle

(c) Subtense Method

(d) Application of Satellite Imagery

(e) Mean Solar Time